

EFFICIENCY

A sweet success

RCL Foods – South Africa

Maximizing sugar mill efficiency with EcoStruxure™ Plant

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Giving old infrastructure a new lease on life

The Pongola sugar mill is one of the three operated by South African food manufacturer RCL Foods. When the company acquired it in 2009, the facility was in dire need of modernization as its proprietary system was almost 30 years old.

With outdated software and hardware, the plant used to experience between 33 and 40 blackouts per 39-week season. The production delays became unacceptable and a drop in product quality was noticeable. Something had to be changed, and in 2014 the company decided to initiate an ambitious 5-year DCS migration project.

The list of project goals was extensive. RCL Foods was looking for an off-the-shelf solution that could be expanded over time and that would optimize production efficiency – a scalable system (both hardware and software) that was easy to operate and allowed for remote access. What's more, the company wanted to reuse the existing infrastructure where possible, so the new solution had to be both future-proof and backward compatible.

Partnering for success

After careful consideration, RCL Foods picked a full, systemic, IoT-ready solution based on EcoStruxure Plant. The scope of work was broad, from the implementation of connected products (Modicon X80 I/O modules, ConneXium network switches, Magelis HMIs, Telefast ABE wiring interfaces), through edge control (Modicon M580 Ethernet programmable automation controllers), to software and analytics (AVEVA's System Platform, Historian and Historian Client, and Intouch HMI).

This comprehensive project was designed and implemented by system integrator Control Software Solutions (Pty) Ltd, a Master Alliance Partner and Certified Wonderware Partner based in South Africa, with a proven track record for successfully delivering Schneider Electric solutions.

Goal

Modernize an outdated DCS to reduce downtime and increase sugar mill efficiency.

Story

An outdated system caused unacceptable production downtime, affecting the plant's output and product quality.

Solution

A modern and reliable automated control system based on EcoStruxure Plant and supported by AVEVA's System Platform, with remote access capabilities.

Results

Greater visibility into the plant's operations, reduced downtime, and a 20% increase in throughput.

A system that works wonders

At the heart of the project is System Platform, a scalable solution that integrates the process with the enterprise, unifies all applications in a central hub, and integrates all remote, local, and historian clients into one system platform. During the project implementation, its original scope was expanded and the sugar handling system was connected to a new M580 processor. This made it possible to completely remove the outdated DCS from the site and migrate to a new system in order to remotely control all of the plant's processes.

"Using System Platform with the M580 made the project integration simpler faster and efficient. This presented our customer with the peace of mind that future development will continue to add additional value on their investment," says Pieter Venter, Director and Founder of Control Software Solutions (CSS).

"All decisions taken are now based on scientific fact rather than years of repetitive engagement [experience]. Production loss opportunity as well as root cause and failure analysis are now effectively done with drastically minimized recurrence. Given the power of our new system, we can now actively and collectively contribute to the success of our organization," says Amos Matingane, Control & Instrumentation Engineer at RCL Foods.

Handing back control

The new automated control system has not only improved the sugar mill efficiency and the plant's output, but also empowered its personnel. "Schneider Electric EcoStruxure allows us to remotely diagnose and view the plant like we could never do before. This gives us the flexibility so that we're able to access the plant at any time from any locations via our laptops, smartphone, or tablet," says Alan Williamson, Manufacturing Executive at Pongola Sugar Mill.

Thanks to EcoStruxure, the RCL staff now have all the actionable insight at hand, and can make bankable decisions and proactively optimize the operations of the plant.

"They [the staff] are now playing a meaningful role beyond just clicking the mouse and are fully engaged in reducing mean time to repair through prompt diagnostics using the power of our new systems," explains Amos Matingane. "Maintenance personnel is now able to cross-reference the data with readily available trends. All decisions taken are now based on scientific facts rather than repetitive actions," he adds.

The upshot? Since installing the Schneider Electric equipment, the facility has significantly reduced downtime and increased its output by 20%. With the new system in place, frequent blackouts are a thing of the past.

"We used to have roughly 33 to 40 blackouts in the season but since installing the Schneider Electric equipment, we've only had three blackouts."

Alan Williamson,
Manufacturing Executive
RCL Foods, Pongola
Sugar Mill

20%

increase in output

EcoStruxure™ Plant Innovation At Every Level



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EcoStruxure™

Innovation At Every Level

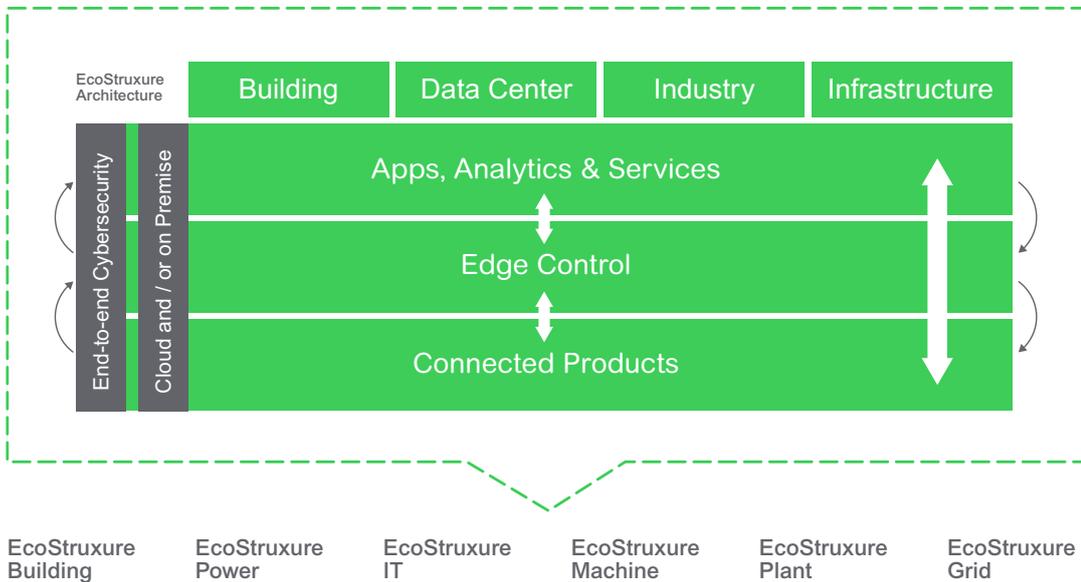
IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric’s open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure™ has been deployed in 480,000+ sites, with the support of 20,000+ system integrators and developers, connecting over 1.6 million assets under management through 40+ digital services.

One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise



Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

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